

ABSTRACT

According to the present invention there is  
5 provided a process for upgrading an ore or concentrate  
that contains metal sulphur minerals and gangue material.  
The process includes the stages of:

a) selectively leaching the ore or concentrate using  
an ammoniacal solution containing ammonium carbonate that  
10 forms soluble metal ammine complexes;

b) separating the solid and liquid phases formed in  
stage a) with the liquid phase forming a solution  
including soluble metal ammine complexes and the solid  
phase including at least in part the gangue material;

15 c) removing ammonia and carbon dioxide from the  
liquid phase formed in step b) under conditions so as to  
selectively precipitate the valuable metal(s); and

d) separating the solid and liquid phases formed in  
stage c) with the solid phase forming a more-concentrated  
20 source of valuable metal.